

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
27 October 2005 (27.10.2005)

PCT

(10) International Publication Number
WO 2005/100580 A1

(51) International Patent Classification⁷: C12P 13/00, 7/40

(21) International Application Number:
PCT/IB2005/000873

(22) International Filing Date: 1 April 2005 (01.04.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/562,133 14 April 2004 (14.04.2004) US

(71) Applicant (for all designated States except US): **PFIZER PRODUCTS INC.** [US/US]; Eastern Point Road, Groton, CT 06340 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **BURNS, Michael, Paul** [US/US]; Pfizer Global Research & Development, Eastern Point Road, Groton, CT 06340 (US). **WEAVER, Justin, Kaine** [US/US]; Pfizer Global Research and Development, 301 Henrietta Street, Kalamazoo, MI 49001 (US). **WONG, John, Wing** [CA/US]; Pfizer Global Research and Development, Eastern Point Road, Groton, CT 06340 (US).

(74) Agents: **FULLER, Grover, F., Jr.** et al.; c/o LAWRENCE, Jackie, Pfizer Inc., MS8260-1615, Eastern Point Road, Groton, CT 06340 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: STEREOSELECTIVE BIOCONVERSION OF ALIPHATIC DINITRILES INTO CYANO CARBOXYLIC ACIDS

(57) Abstract: The present invention is directed to a regio- and stereoselective bioconversion of selected aliphatic dinitriles into corresponding cyanocarboxylic acids. More particularly, the present invention provides methods for the conversion of 2-isobutylsuccinonitrile into (S)-3 cyano-5-methylhexanoic acid, which is a useful intermediate in the synthesis of (S)-3-(aminomethyl)-5-methylhexanoic acid (pregabalin). Pregabalin can be used for treating certain cerebral diseases, for example, in the treatment and prevention of seizure disorders, pain, and psychotic disorders.

WO 2005/100580 A1